

lengthy to be reproduced efficiently herein. Nonetheless, Applicants respectfully traverse this rejection.

Anticipation under section 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under section 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). To maintain a proper rejection under section 102, a single reference must teach each and every element or step of the rejected claim. *Atlas Powder v. E.I. du Pont*, 750 F.2d 1569 (Fed. Cir. 1984). Thus, if the claims recite even one element not found in the cited reference, the reference does not anticipate the claimed invention.

The MacGregor reference discloses a sideswipe contact system for an add-in PC card. The system includes an apparatus for identifying the card as having a sideswipe connector and an apparatus on a header for causing the header connectors to be electrically isolated from an inserted PC card unless the PC card is equipped with the sideswipe connectors. Abstract. An important aspect of the disclosure is the recognition of the problems created by a non-sideswipe PC card being inserted into a host computer system equipped with a slot for sideswipe PC cards. Col. 4, lines 14-17. To avoid these problems, the MacGregor reference discloses a means of distinguishing between sideswipe and non-sideswipe PC cards as a card is inserted into the host computer system and for preventing electrical contact between the PC card and the host in the sideswipe area unless a sideswipe card is inserted. Col. 4, lines 53-58. Connector assemblies on

the host computer system are movably engaged with the PC card once the detection system identifies the PC card as a sideswipe card.

In one specific embodiment of the detector arrangement, an optical reflector 130 is positioned on a PC card 60. Col. 7, lines 5-8. A light source 132 and an optical detector 136 are positioned along the inner dimension of a header frame member 64 such that the light generated from the light source 132 is reflected by the optical reflector 130 to the light detector 136 when the PC card 60 abuts the header frame member 64. Col. 7, lines 8-17. The light detector 136 is electrically coupled to a motor controller 122 to facilitate engagement of the contact block 68 with the PC card 60 if the detector 136 receives a reflected signal from the optical reflector 130, thereby indicating that the PC card 60 is a sideswipe card. To be clear, the MacGregor reference discloses a system for indicating that a swipecard is installed into the system.

Conversely, the present application is directed to a method and apparatus for detecting the presence or absence of any hot-pluggable components in a computer system. Page 5, lines 6-7. To detect the absence of the hot-pluggable component, an electromagnetic energy source is located on a first side of a system board proximate to a first end of the edge connector used to couple the hot-pluggable component to the system board. Page 7, line 19 - page 8, line 4. The electromagnetic energy source directs electromagnetic energy to an electromagnetic energy detector located on a second side of the system board proximate to the first end of the edge connector of the system board. Page 5, lines 5-8. When the hot-pluggable component is absent, and therefore not connected to the system board, the electromagnetic energy transmitted by the source travels unimpeded and is detected by the detector. Page 8, lines 12-14. The detection of a

presence of electromagnetic energy is communicated to a processor which interprets the presence of the electromagnetic energy as an indication that the hot-pluggable component is absent. Page 8, lines 14-17. The processor stores the indication that the hot-pluggable component is not present and instructs the power supply to disable power to the edge connector on the system board. Page 8, line 17 through page 9, line 2.

When the hot-pluggable component is present and connected to the system board, the electromagnetic energy transmitted by the source is impeded by the hot-pluggable component and the electromagnetic energy is *not* detected by the detector. Page 9, lines 3-6. The detection of an absence of the electromagnetic energy is communicated to the processor which interprets the absence of the electromagnetic energy as an indication that the hot-pluggable component is present. Page 9, lines 6-9. The processor stores the indication that the hot-pluggable component is present and instructs the power supply to enable power to the edge connector on the system board. Page 9, lines 9-12.

The location of the source and the detector are designed such that the edge connector of the hot-pluggable component makes physical and electrical contact with the edge connector of the system board prior to the hot-pluggable component obstructing the electromagnetic energy as the hot-pluggable component is mated to the system board. Page 9, lines 13-18. Similarly, as the hot-pluggable component is extracted from the system board, the hot-pluggable component clears the path of electromagnetic energy prior to the edge connector of the hot-pluggable component breaking physical and electrical contact with the edge connector of the system board. Page 9, line 18 - page 10, line 3. Therefore, the edge connector of the system board is always

powered-down when electrical contact is made or broken between the edge connector of the hot-pluggable component and the edge connector of the system board. Page 10, lines 306. Further, a second source and a second detector may be added to the system to ensure an accurate determination of the presence or absence of a hot-pluggable component, even if the hot-pluggable component is inserted or removed at an angle. Page 11, line 16 - page 12, line 2.

Accordingly, independent claims 1, 6 and 10 each recite an electromagnetic energy source (or a means for generating electromagnetic energy) for generating electromagnetic energy to a second opposing side of the system board. Each of claims 1, 6 and 10 further recite an electromagnetic energy detector (or means for detecting electromagnetic energy) located on the second side of the system board, for detecting the presence of electromagnetic energy when a hot-pluggable component is *not* mated to the connector and the electromagnetic energy is thereby unobstructed by the hot-pluggable component, and further for detecting an absence of electromagnetic energy when the hot-pluggable component *is* mated to the connector and the electromagnetic energy is thereby obstructed by the hot-pluggable component. Claim 10 further recites a second electromagnetic source and a second electromagnetic energy detector having similar limitations as the first source and first detector. Independent claim 12 recites a method for detecting the presence of a hot-pluggable component comprising the steps of: generating electromagnetic energy on a first side of a system board, detecting a presence of electromagnetic energy on the second opposing side of the system board when a hot-pluggable component is *not* mated to the connector, and detecting an absence of the electromagnetic energy on the second opposing side of the system board when a hot-pluggable component *is* mated to the connector.

Based on a similarity of subject matter recited in each of the independent claims, the claims are discussed together below.

As described above, the present claims recite a source located on a first side of a system board and a detector located on a second opposing side of the system board. At best, the MacGregor reference discloses a source and a detector located on the *same* side of a system board. Further, the detector disclosed in the MacGregor reference does not detect electromagnetic energy when a hot-pluggable component is *not* mated to the connector and the electromagnetic energy is thereby unobstructed by the hot-pluggable component, as recited in the present claims. As clearly described above, the PC card 60 of the MacGregor reference does not obstruct the electromagnetic energy upon insertion into the system board. In fact, MacGregor discloses the exact opposite. That is to say, that the detector in the MacGregor reference detects the presence of light from the light source 132 when the hot-pluggable component *is* mated with the source. Likewise, the detector disclosed in the MacGregor reference does not detect the absence of electromagnetic energy when the hot-pluggable board *is* mated with the system, as recited in the present claims, but rather detects the presence of light from the light source 132 only if the PC card 60 is a slideable PC card and therefore includes an optical reflector 130. Still further, nothing in the MacGregor reference obstructs the electromagnetic energy produced by a source as recited in the present claims. It is clear that the optical detector 136 only detects the presence of light from the light source 132 if a PC card 60 is inserted *and* if the PC card 60 is a swipecard.

With specific respect to independent claim 10, the Examiner failed to cite any specific elements in the MacGregor reference as correlating with the elements recited in claim 10. As described above, claim 10 recites a first source and detector and a second source and detector having a number of limitations as described above. There is absolutely nothing in the MacGregor reference that could possibly be correlated with a second electromagnetic energy source or a second electromagnetic energy detector. If the Examiner chooses to maintain his rejection of claim 10 based on the MacGregor reference, Applicants respectfully request that the Examiner direct Applicants to the specific elements that are being used as the basis of his rejection under 35 U.S.C. § 102(b).

In view of the remarks set forth above, Applicants respectfully submit that the subject matter of independent claims 1, 6, 10 and 12 is not anticipated by the MacGregor reference. Because the MacGregor reference fails to recite each of the elements claimed in the independent claims, Applicants further submit that each of the claims dependent thereon are also allowable based on the deficiencies of the MacGregor reference described with respect to the independent claims. Accordingly, Applicants respectfully request withdrawal of the Examiner's rejection and allowance of claims 1, 4-6, 9-12, and 15-17.

Rejections Under 35 U.S.C. §103

The Examiner rejected claims 2, 7, and 13 under 35 U.S.C. § 103(a) as being unpatentable over MacGregor et al. and took Official Notice that controllers and processors are well known in the art for providing a means of receiving and interpreting signals in order to perform a desired function. The Examiner rejected claims 3, 8, and 14 as being unpatentable

over MacGregor et al. in view of Lien et al. (U.S. Pat. No. 5,386,567). Finally, the Examiner rejected claim 18 as being unpatentable over MacGregor et al. in view of Eisele et al. (U.S. Pat. No. 6,189,055).

Applicants respectfully traverse each of these rejections. Neither of the cited references, nor the Examiner's use of Official Notice, cure the deficiencies of the MacGregor reference discussed above with respect to the rejections under 35 U.S.C. § 102(b). Therefore, the cited combination does not even disclose all of the recited elements, much less provide any suggestion to combine these separate teachings in the manner recited in the present claims. Accordingly, Applicants respectfully submit that the subject matter of claims 2, 3, 7, 8, 13, 14, and 18 is not rendered obvious by the cited references, either alone or in combination. Accordingly, Applicants respectfully request withdrawal of the Examiner's rejection and allowance of claims 2, 3, 7, 8, 13, 14, and 18.

Conclusion

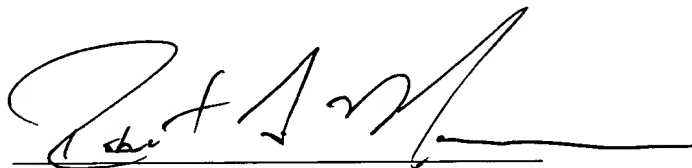
In view of the remarks set forth above, Applicants respectfully request allowance of claims 1-18. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

General Authorization for Extensions of Time

In accordance with 37 C.F.R. § 1.136, Applicants hereby provide a general authorization to treat this and any future reply requiring an extension of time as incorporating a request

therefor. Furthermore, Applicants authorize the Commissioner to charge the appropriate fee for any extension of time to Deposit Account No. 06-1315; Order No. COMP:0078/FLE (P98-2379).

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'R. Manware', is written over a horizontal line.

Date: January 2, 2003

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